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EXAMINER	
DEAN, RAYMOND S	
ART UNIT	**PAPER NUMBER**
2684	4

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/865,003	LEE ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 5, 7 - 15, 17 - 20, and 22 - 23* is/are rejected.

7)☒ Claim(s) *6, 16, and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Reza et al. (US 6,654,384 B1).

Regarding Claim 1, Reza teaches a method for repeating data transmission between a reception side and a transmission side in a radio communication system (Column 4 lines 15 – 23, Column 7 lines 65 – 67, Column 8 lines 1 – 13, the base station controller can transmit/receive and the customer premise equipment can transmit/receive) wherein, the transmission side includes a first upper layer and a first layer 1 and the reception side includes a second upper layer and a second layer 1 (Column 3 lines 36 – 63, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers), the method comprising the steps of: by the transmission side, measuring a radio environment (Column 7 lines 7 – 26, Column 7

lines 40 – 51, Column 8 lines 37 – 51, these are measured characteristics of the radio environment); determining to perform repeated transmission or normal transmission based on a measurement result (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the sender will perform a retransmission or a normal transmission based on an ARQ which is caused by a lost or corrupted packet due to a measured characteristic of the radio link); if it is determined to perform the repeated transmission, by the first upper layer of the transmission side, performing a first data processing (Column 3 lines 36 – 63, Column 8 lines 14 – 28, there is an inherent determining of retransmission or normal transmission by the upper layer due to the type of data selected for transmission, since this wireless packet system conforms to the OSI model the data will be transmitted from the upper layer to the physical layer, which is layer 1, for modulation and transmission to the receiver); by the reception side, receiving data from the transmission side and determining if the repeated transmission or the normal transmission was performed (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the receiver has the ability to send an ARQ such that said receiver can receive retransmitted information thus there is an inherent determination as to whether a retransmission or normal transmission was performed); if the repeated transmission was performed, by the second layer 1 of the reception side, performing a second data processing (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, since this wireless packet system conforms to the OSI model the receiver will receive the retransmitted packets on the physical layer, which is layer 1, the received data is then demodulated and transmitted to the upper layers).

Regarding Claim 2, Reza teaches all of the claimed limitations recited in Claim 1. Reza further teaches measuring the radio environment periodically by the first layer 1 of the transmission side (Column 3 lines 36 – 63, Column 8 lines 37 – 51, the only way that the sender can adapt to the changing characteristics of the radio environment is by periodically measuring said characteristics of said radio environment thus this is an inherent characteristic of the system taught by Reza, this wireless packet system conforms to the OSI model thus the only way that said characteristics of said radio environment can be measured is through the physical layer, which is layer 1, thus this is also an inherent characteristic of the system taught by Reza).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Hamalainen et al. (US 6,289, 217 B1).

Regarding Claim 3, Reza teaches all of the claimed limitations recited in Claim 2. Reza further teaches a measured radio environment characterized by a higher and lower value (Column 7 lines 40 – 51, the BER is the measured characteristic) and

performing a repeated transmission or normal transmission (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the sender can transmit once or retransmit).

Reza does not specifically teach a predetermined threshold value.

Hamalainen teaches a predetermined threshold value (Column 4 lines 65 – 67, Column 5 lines 1 – 5).

Reza and Hamalainen both teach dynamic wireless systems that adapt to a variable radio environment thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the threshold value taught in Hamalainen in the wireless system of Reza such that there will be optimal radio link adaptation.

Regarding Claim 4, Reza in view of Hamalainen teaches all of the claimed limitations recited in Claim 3. Reza further teaches determining to perform the repeated transmission or the normal transmission is performed at the first upper layer of the transmission side based on the measurement result that is reported from the first layer 1 (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, the sender will perform a retransmission or a normal transmission based on an ARQ which can be caused by a lost or corrupted packet due to a measured characteristic of the radio link, this wireless packet system conforms to the OSI model thus the ARQ is received on the physical layer (layer 1), the packet that needs to be retransmitted in stored in the upper layer, said packet is transmitted from the upper layer to the physical layer, upon notification from said physical layer, for retransmission on the radio link to the receiver).

Regarding Claim 5, Reza teaches all of the claimed limitations recited in Claim 4. Reza further teaches by the first upper layer, storing the data in a first storage unit thereof and managing the stored data (Column 3 lines 36 – 63, Column 5 lines 56 – 65, Column 8 14 – 28, this wireless packet system conforms to the OSI model thus the upper layer stores and manages file data); by the first upper layer, transmitting transmission information and the stored data to the first layer 1, the transmission information including information about the repeated transmission (Column 3 lines 36 – 63, Column 5 lines 56 – 65, Column 8 lines 14 – 28, there is an inherent determining of retransmission or normal transmission by the upper layer, which is layer 5, the data is transmitted from the upper layer to the physical layer, which is layer 1, for modulation and transmission to the receiver, said inherent determination of retransmission or normal transmission is the transmission information, said transmission information will cause certain parameters to be set such that the physical layer is configured to reflect said parameters); by the first layer 1, storing the received data in a second storage unit thereof (Column 3 lines 36 – 63, Column 8 lines 14 – 28, since the data is transmitted in packets there is an inherent storage of the data thus enabling all of the required data to be transmitted on the physical layer); by the first layer 1, transmitting the data to the reception side repeatedly predetermined times based on the transmission information (Column 7 lines 65 – 67, Column 8 lines 1 – 28, there is an inherent determination of retransmission or normal transmission by the upper layer thus the retransmit parameters will be set such that the physical layer will be configured to retransmit data on the radio link).

5. Claims 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Hamalainen et al. (US 6,289, 217 B1) and in further view of Mandyam (6,167,273).

Regarding Claim 7, Reza teaches all of the claimed limitations recited in Claim 5. Reza further teaches the predetermined times are determined based on the BER (Column 7 lines 40 – 51, Column 8 lines 14 – 28, when file data is selected to be transmitted the data packets can be corrupted or lost due to different characteristics of the radio environment, the BER is one of these characteristics), Reza also teaches the quality of service (QoS) condition (Column 7 lines 7 – 26, Column 7 lines 40 – 51, Column 8 lines 37 – 51, these are all characteristics that affect the radio link and hence the quality of service thus QoS is inherent in the system taught by Reza) and measuring said conditions before beginning a radio service (Column 4 lines 53 – 65, there is an optimal power level and modulation type that is selected before radio transmission, in order for there to be a determination of an optimal power level and modulation type there must be measurement of the above conditions).

Reza does not specifically teach a signal to noise ratio (SNR).

Hamalainen teaches a SNR (Column 11 lines 51 – 57).

Reza and Hamalainen both teach dynamic wireless systems that adapt to a variable radio environment thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the SNR in Hamalainen in the wireless system of Reza such that there will be optimal radio link adaptation.

Reza in view of Hamalainen does not specifically teach a load status.

Mandyam teaches a load status (Column 6 lines 61 – 66, a level of network loading is a load status).

Reza in view of Hamalainen and Mandyam teach wireless systems that maintain QoS levels despite variable radio environment thus it would have been obvious to one of ordinary skill in the art at the time the invention was made use the load status taught by Mandyam in the system of Reza in view of Hamalainen such that there will optimal QoS levels in a variable radio environment.

Regarding Claim 8, Reza teaches all of the claimed limitations recited in Claim 5. Reza further teaches receiving the data from the transmission side that is performed at the second layer 1 of the reception side (Column 3 lines 36 – 63, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers, receiving data from the transmitter on the physical layer (layer 1)).

Regarding Claim 9, Reza teaches all of the claimed limitations recited in Claim 8. Reza further teaches determining if the repeated transmission or the normal transmission was performed at the second layer 1 based on the transmission information that is transmitted from the transmission side to the reception side (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 28, there is an inherent determination of retransmission or normal transmission by the upper layer thus the retransmit parameters will be set such that the physical layer will be configured to retransmit data from the transmitter, the acknowledgement parameters will also be set

such that the receiver can determine if there will be normal transmission or retransmission, the acknowledgement parameter information is the transmission information that is transmitted to the reception side).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Hamalainen et al. (US 6,289, 217 B1) in further view of Mandyam (6,167,273) and in further view of Miya et al. (US 2002/0145991 A1).

Regarding Claim 10, Reza teaches all of the claimed limitations recited in Claim 9. Reza further teaches the transmission information is transmitted over a path recognizable by the second layer 1 (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 28, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, the data is transmitted over a path recognizable by said physical layer, the acknowledgement parameter information is the transmission information that is transmitted).

Reza in view of Hamalainen and in further view of Mandyam does not specifically teach a dedicated physical control channel (DPCCH).

Miya teaches a DPCCH (Section 0035 lines 11 – 14).

Reza in view of Hamalainen and in further view of Mandyam and Miya teach a wireless packet system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the DPCCH taught in Miya in the wireless packet system of Reza in view of Hamalainen and in further view of Mandyam as a

means to transmit control information to the receiver such that said receiver will be configured properly for the reception of packet data.

7. Claims 11 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Hamalainen et al. (US 6,289, 217 B1) in further view of Mandyam (6,167,273) in further view of Miya et al. (US 2002/0145991 A1) and in further view Gruhn et al. (US 2003/0053440 A1).

Regarding Claim 11, Reza in view of Hamalainen in further view of Mandyam and in further view of Miya teaches all of the claimed limitations recited in Claim 10. Reza further teaches transmitting the data to the second upper layer (Column 3 lines 36 – 63, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, the data is received from the transmitter on the physical layer (layer 1) and said data is transmitted to the upper layers).

Reza in view of Hamalainen in further view of Mandyam and in further view of Miya does not specifically teach combining the data repeatedly predetermined times.

Gruhn teaches combining the data repeatedly predetermined times (Section 0056, this is a well know combining method).

Reza in view of Hamalainen in further view of Mandyam and in further view of Miya and Gruhn teach a wireless packet system that uses the ARQ method thus it would have been obvious to one or ordinary skill in the art at the time the invention was made to use the Hybrid ARQ method taught in Gruhn in the wireless packet system

taught in Reza in view of Hamalainen in further view of Mandyam and in further view of Miya such that a wireless packet system with error correction capability is enabled.

Regarding Claim 12, Reza in view of Hamalainen in further view of Mandyam in further view of Miya and in further view of Gruhn teaches all of the claimed limitations recited in Claim 11. Gruhn further teaches a maximal ratio combining (MRC) process (Section 0056).

Regarding Claim 13, Gruhn teaches all of the claimed limitations recited in Claim 12. Reza further teaches data to be retransmission requested are stored and managed at the first storage unit of the first upper layer (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this is a wireless packet system that conforms to the OSI model thus storage of the data in the upper layer is an inherent characteristic).

8. Claims 14, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Gruhn et al. (US 2003/0053440 A1).

Regarding Claim 14, Reza teaches a method for performing data transmission between a reception side and a transmission side (Column 4 lines 15 – 23, the base station controller can transmit/receive and the customer premise equipment can transmit/receive) upon receiving erroneous data at the reception side in a radio communication system wherein the transmission side includes a first upper layer and a first layer 1 and the reception side includes a second upper layer and a second layer 1 (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this is a

wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers, when there is a reception of erroneous data an ARQ is transmitted), the method comprising: by the transmission side, determining if the reception side requests to retransmit data in which an error occurred (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the reception side sends an ARQ); if the reception side requests to retransmit the data in which the error occurred, by the first upper layer, performing a first data processing (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers, when an ARQ is sent to the transmitter the data that needs to be retransmitted is transmitted from the upper layer to the physical layer (layer 1) for modulation and transmission); by the reception side, receiving the data from the transmission side and determining if repeated transmission or normal transmission was performed (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the receiver has the ability to send an ARQ such that said receiver can receive retransmitted information thus there is an inherent determination as to whether a retransmission or normal transmission was performed); if the repeated transmission was performed, by the second layer 1 of the reception side, performing a second data processing (Column 7 lines 65 – 67, Column 8 lines 1 – 13, since this wireless packet system conforms to the OSI model the receiver will receive the retransmitted packets on the physical layer, which is layer 1, the received data is then demodulated and transmitted to the upper layers), by the second

layer 1, determining if the received data have errors; if the received data have errors, by the second layer 1, informing the second upper layer that the received data have errors (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, an ARQ is transmitted when there is a detection of errors in the data, since this wireless packet system conforms to the OSI model there is an inherent informing of the upper layer from the physical layer that said errors have been detected on the physical layer); and by the second upper layer, requesting the transmission side to retransmit the data (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this wireless packet system conforms to the OSI model thus the received data is stored in the upper layer, since the data is stored in the upper layer said upper layer knows what data packets are missing thus causing said upper layer to request a retransmission by alerting the physical layer to transmit an ARQ).

Reza does not specifically teach restoring/combining the received data repeatedly predetermined times.

Gruhn teaches restoring/combining the received data repeatedly predetermined times (Section 0056, this is a well know combining method).

Reza and Gruhn both teach wireless packet system that uses an ARQ method thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use combining method taught in Gruhn in the wireless packet system taught in Reza such that a wireless packet system with error correction capability is enabled.

Regarding Claim 15, Reza in view of Gruhn teaches all of the claimed limitations recited in Claim 14. Reza further teaches the first data processing includes the step of: by the first upper layer, transmitting to the first layer 1 transmission information and the data stored in a first storage unit of the first upper layer, the transmission information including information about the repeated transmission (Column 3 lines 36 – 63, Column 5 lines 56 – 65, Column 8 14 – 28, this wireless packet system conforms to the OSI model thus the upper layer stores and manages file data, there is an inherent determining of retransmission or normal transmission by the upper layer, which is layer 5, the data is transmitted from the upper layer to the physical layer, which is layer 1, for modulation and transmission to the receiver, said inherent determination of retransmission or normal transmission is the transmission information, said transmission information will cause certain parameters to be set such that the physical layer is configured to reflect said parameters); by the first layer 1, storing the data in a second storage unit thereof (Column 3 lines 36 – 63, Column 8 lines 14 – 28, since this wireless packet system conforms to the OSI model and since the data is transmitted in packets there is an inherent storage of the data thus enabling all of the required data to be transmitted on the physical layer); and by the first layer 1, transmitting the data to the reception side repeatedly predetermined times based on the transmission information (Column 7 lines 65 – 67, Column 8 lines 1 – 28, there is an inherent determination of retransmission or normal transmission by the upper layer thus the retransmit parameters will be set such that the physical layer will be configured to retransmit data on the radio link).

Regarding Claim 18, Reza teaches all of the claimed limitations recited in Claim 15. Reza further teaches determining if the repeated transmission or the normal transmission was performed is performed at the second layer 1 based on the transmission information that is transmitted from the transmission side to the reception side (Column 7 lines 65 – 67, Column 8 lines 1 – 28, there is an inherent determination of retransmission or normal transmission by the upper layer thus the retransmit parameters will be set such that the physical layer will be configured to retransmit data from the transmitter, the acknowledgement parameters will also be set such that the receiver can determine if there will be normal transmission or retransmission, the acknowledgement parameter information is the transmission information that is transmitted to the reception side).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Gruhn et al. (US 2003/0053440 A1) in further view of Hamalainen et al. (US 6,289, 217 B1) and in further view of Mandyam (6,167,273).

Regarding Claim 17, Reza teaches all of the claimed limitations recited in Claim 15. Reza further teaches the predetermined times are determined based on the BER (Column 7 lines 40 – 51, Column 8 lines 14 – 28, when file data is selected to be transmitted the data packets can be corrupted or lost due to different characteristics of the radio environment, the BER is one of these characteristics), Reza also teaches the quality of service (QoS) condition (Column 7 lines 7 – 26, Column 7 lines 40 – 51,

Column 8 lines 37 – 51, these are all characteristics that affect the radio link and hence the quality of service thus QoS is inherent in the system taught by Reza) and measuring said conditions before beginning a radio service (Column 4 lines 53 – 65, there is an optimal power level and modulation type that is selected before radio transmission, in order for there to be a determination of an optimal power level and modulation type there must be measurement of the above conditions).

Reza in view of Gruhn does not specifically teach a signal to noise ratio (SNR).

Hamalainen teaches a SNR (Column 11 lines 51 – 57).

Reza in view of Gruhn and Hamalainen teach dynamic wireless systems that adapt to a variable radio environment thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the SNR in Hamalainen in the wireless system of Reza in view of Gruhn such that there will be optimal radio link adaptation.

Reza in view of Gruhn and in further view of Hamalainen does not specifically teach a load status.

Mandyam teaches a load status (Column 6 lines 61 – 66, a level of network loading is a load status).

Reza in view of Gruhn and in further view of Hamalainen and Mandyam teach wireless systems that maintain QoS levels despite variable radio environment thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the load status taught by Mandyam in the system of Reza in view of Gruhn

and in further view of Hamalainen such that there will optimal QoS levels in a variable radio environment.

10. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Gruhn et al. (US 2003/0053440 A1) and in further view of Miya et al. (US 2002/0145991 A1).

Regarding Claim 19, Reza teaches all of the claimed limitations recited in Claim 18. Reza further teaches the transmission information is transmitted over a path recognizable by the second layer 1 (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 28, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, the data is transmitted over a path recognizable by said physical layer, the acknowledgement parameter information is the transmission information that is transmitted).

Reza in view of Gruhn does not specifically teach a dedicated physical control channel (DPCCH).

Miya teaches a DPCCH (Section 0035 lines 11 – 14).

Reza in view of Gruhn and Miya teach a wireless packet system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the DPCCH taught in Miya in the wireless packet system of Reza in view of Gruhn as a means to transmit control information to the receiver such that said receiver will be configured properly for the reception of packet data.

Regarding Claim 20, Reza in view of Gruhn and in further view of Miya teaches all of the claimed limitations recited in Claim 19. Gruhn further teaches combining data using a maximal ratio combining process (Section 0056).

11. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Rhee (US 6,289,054 B1).

Regarding Claim 22, Reza teaches a method for repeating data transmission between a reception side and a transmission side in a radio communication system (Column 4 lines 15 – 23, Column 7 lines 65 – 67, Column 8 lines 1 – 13, the base station controller can transmit/receive and the customer premise equipment can transmit/receive) wherein, the transmission side includes a first upper layer and a first layer 1 and the reception side includes a second upper layer and a second layer 1 (Column 3 lines 36 – 63, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers), the method comprising the steps of: by the transmission side, measuring a radio environment (Column 7 lines 7 – 26, Column 7 lines 40 – 51, Column 8 lines 37 – 51, these are measured characteristics of the radio environment); determining to perform repeated transmission or normal transmission based on a measurement result (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the sender will perform a retransmission or a normal transmission based on an ARQ which is caused by a lost or corrupted packet due to a measured characteristic of the radio link); if it is determined to perform the repeated transmission, by the first upper layer of

the transmission side, performing a first data processing (Column 3 lines 36 – 63, Column 8 lines 14 – 28, there is an inherent determining of retransmission or normal transmission by the upper layer due to the type of data selected for transmission, since this wireless packet system conforms to the OSI model the data will be transmitted from the upper layer to the physical layer, which is layer 1, for modulation and transmission to the receiver); by the reception side, receiving data from the transmission side and determining if the repeated transmission or the normal transmission was performed (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the receiver has the ability to send an ARQ such that said receiver can receive retransmitted information thus there is an inherent determination as to whether a retransmission or normal transmission was performed); if the repeated transmission was performed, by the second layer 1 of the reception side, performing a second data processing (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, since this wireless packet system conforms to the OSI model the receiver will receive the retransmitted packets on the physical layer, which is layer 1, the received data is then demodulated and transmitted to the upper layers).

Reza does not specifically teach a computer-readable media storing instructions.

Rhee teaches a computer-readable media storing instructions (Column 5 lines 7 – 10).

Reza and Rhee both teach packet-based systems with the ability to recover lost packets. Reza (Column 3 lines 36 – 39) and Rhee (Column 5 lines 1 – 4) also both teach packet based systems comprising computers thus it would have been obvious to

one of ordinary skill in the art at the time the invention was made to use the computer-readable media for storing instructions taught in Rhee in the packet based system of Reza.

12. Claim 23 is under 35 U.S.C. 103(a) as being unpatentable over Reza et al. (US 6,654,384 B1) in view of Gruhn et al. (US 2003/0053440 A1) and in further view of Rhee (US 6,289,054 B1).

Regarding Claim 23, Reza teaches a method for performing data transmission between a reception side and a transmission side (Column 4 lines 15 – 23, the base station controller can transmit/receive and the customer premise equipment can transmit/receive) upon receiving erroneous data at the reception side in a radio communication system wherein the transmission side includes a first upper layer and a first layer 1 and the reception side includes a second upper layer and a second layer 1 (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers, when there is a reception of erroneous data an ARQ is transmitted), the method comprising: by the transmission side, determining if the reception side requests to retransmit data in which an error occurred (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the reception side sends an ARQ); if the reception side requests to retransmit the data in which the error occurred, by the first upper layer, performing a first data processing (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this

is a wireless packet system that conforms to the OSI model thus both the sender and receiver have a physical layer, which is the first layer 1, and layers 3 – 5, which are the upper layers, when an ARQ is sent to the transmitter the data that needs to be retransmitted is transmitted from the upper layer to the physical layer (layer 1) for modulation and transmission); by the reception side, receiving the data from the transmission side and determining if repeated transmission or normal transmission was performed (Column 7 lines 65 – 67, Column 8 lines 1 – 13, the receiver has the ability to send an ARQ such that said receiver can receive retransmitted information thus there is an inherent determination as to whether a retransmission or normal transmission was performed); if the repeated transmission was performed, by the second layer 1 of the reception side, performing a second data processing (Column 7 lines 65 – 67, Column 8 lines 1 – 13, since this wireless packet system conforms to the OSI model the receiver will receive the retransmitted packets on the physical layer, which is layer 1, the received data is then demodulated and transmitted to the upper layers), by the second layer 1, determining if the received data have errors; if the received data have errors, by the second layer 1, informing the second upper layer that the received data have errors (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, an ARQ is transmitted when there is a detection of errors in the data, since this wireless packet system conforms to the OSI model there is an inherent informing of the upper layer from the physical layer that said errors have been detected on the physical layer); and by the second upper layer, requesting the transmission side to retransmit the data (Column 3 lines 36 – 63, Column 7 lines 65 – 67, Column 8 lines 1 – 13, this wireless packet

system conforms to the OSI model thus the received data is stored in the upper layer, since the data is stored in the upper layer said upper layer knows what data packets are missing thus causing said upper layer to request a retransmission by alerting the physical layer to transmit an ARQ).

Reza does not specifically teach restoring/combining the received data repeatedly predetermined times.

Gruhn teaches restoring/combining the received data repeatedly predetermined times (Section 0056, this is a well know combining method).

Reza and Gruhn both teach wireless packet system that uses an ARQ method thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use combining method taught in Gruhn in the wireless packet system taught in Reza such that a wireless packet system with error correction capability is enabled.

Reza in view of Gruhn does not specifically teach a computer-readable medium storing instructions.

Rhee teaches a computer-readable medium storing instructions (Column 5 lines 7 – 10).

Reza in view of Ghrun and Rhee teach packet-based systems with the ability to recover lost packets. Reza (Column 3 lines 36 – 39) and Rhee (Column 5 lines 1 – 4) also both teach packet based systems comprising computers thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the

computer-readable media for storing instructions taught in Rhee in the packet based system of Reza.

Allowable Subject Matter

13. Claims 6, 16, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claims 6 and 16 Reza in view of Hamalainen and in further view of Mandyam teaches predetermined times that are determined based on conditions including bit error rate (BER), signal to noise ration (SNR), a load status of a transmission side system and quality of service (QoS) of transmitted data, said conditions measured before beginning radio service but the prior art of record fails to specifically show these conditions as first conditions with said first conditions being measured at the time of data transmission.

Regarding Claim 21, Reza teaches wherein data to be retransmission-requested is stored and managed at a first storage unit of the second upper layer but the prior art of record fails to specifically show data to be retransmission-requested are stored and managed at a third storage unit of the second layer 1.

Conclusion

14. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand – delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

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